REMARKS

The Office Action in the above-identified application has been carefully considered and this amendment has been presented to place this application in condition for allowance. Accordingly, reexamination and reconsideration of this application are respectfully requested.

Claims 18–28 are in the present application. It is submitted that these claims were patentably distinct over the prior art cited by the Examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. § 112. The changes to the claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. sections 101, 102, 103 or 112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

Claims 18-28 were rejected under 35 U.S.C. § 102(a) as being anticipated by Keller et al. (Article entitled "Adaptive Modulation Techniques for Duplex OFDM Transmission," IEEE Trans. on Vehicular Tech. Vol. 49, No. 5, Sept. 2000, pp. 1893-1906). The present invention "precalculat[es] a plurality of adaptive loading tables, each loading table containing x subcarriers for modulation with a lower modulation scheme, y subcarriers for modulation with a standard modulation scheme, and z subcarriers for modulation with a higher modulation scheme (x, y, and z are integer numbers)." (Claims 18, 25, and 26) In other words, the present invention pre-calculates adaptive loading tables for the different modulation schemes. (Specification starting at page 12, line 24)

By contrast, Keller proposes an online calculation of the modulation schemes rather than a pre-calculation as required in the present claims. (pp. 1897-98) Specifically, Keller discloses:

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a) The modulation scheme allocation of the sub-bands is actually performed on the basis of a cost function. The cost function takes into account the estimated channel transfer function H. In other words, the online calculation equation (3) of Keller can only be applied once the channel transfer function H has been estimated.

b) The modulation scheme adaptation is performed by repeatedly searching for the block N having the lowest value of the cost function parameter. This is repeated until the total number of bits in the OFDM symbol reaches the target number of bits.

c) From a) and b) above, it should be clear that Keller actually proposes to estimate beforehand the channel transfer function H and then apply a recursive approach to find the proper modulation scheme.

Whereas, the present invention proposes to pre-calculate modulation tables. Pre-calculating therefore is to be understood as taking place before any measurements on a real channel take place and especially before the estimation of a channel transfer function H is carried out. In any case, according to the present invention a plurality of modulation tables is carried out. In contrast thereto, Keller analytically calculates a single modulation table. Correspondingly, Keller also fails to teach to select the modulation scheme to be used out of the plurality of pre-calculated modulation schemes.

The present invention has the advantage that as the tables are pre-calculated, the computing power and time consuming recursive calculation using the cost function (3) according to Keller can be avoided. According to Keller, after the channel transfer function H has been estimated, a complex calculation has to be carried out. According to the present invention, however, once the channel transfer function H has been estimated, one modulation table out of a

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plurality of pre-calculated modulation tables has to be selected. This process can be carried out much quicker than the Keller approach.

Accordingly, Keller fails to meet the present invention's "pre-calculating a plurality of adaptive loading tables" limitation and the claims should now be allowed.

In view of the foregoing amendment and remarks, it is respectfully submitted that the application as now presented is in condition for allowance. Early and favorable reconsideration of the application are respectfully requested.

No additional fees are deemed to be required for the filing of this amendment, but if such are, the Examiner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account No. 50-0320.

If any issues remain, or if the Examiner has any further suggestions, he/she is invited to call the undersigned at the telephone number provided below. The Examiner's consideration of this matter is gratefully acknowledged.

Respectfully submitted,
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